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ABSTRACT

The inappropriateness of standard experimental research design, which can stifle innovations, is discussed in connection with the problems of designing practical techniques for evaluating a Title III curriculum development project. The project, involving 12 school districts and 2,500 students, teaches concept understanding, critical thinking, and research skills through the medium of a world cultures course. Practical evaluation techniques, which rely heavily on subjective assessments by the project staff, teachers, school administrators, and students, were developed. Although in many instances it was necessary to modify standard research procedures, nonetheless product, process, and student evaluations are made and areas of needed revisions are revealed while the project is actually proceeding. The project objectives and survey forms are included. (Author/ES)

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An Example of Process Evaluation

Marion Karl

From reports I have read from other title III projects and articles in some of the professional journals, it seems that in general, evaluators are overlooking an opportunity to have real impact on the directions of educational change. Too often evaluation is limited to final result assessment and process evaluation is neglected or absent. We will all agree that product evaluation is necessary, but it is process evaluation that points to the areas where revisions are necessary while the opportunities for revisions still exist.

There are many reasons few attempts at process evaluation are made. No neat, scientific research design is probable. Assumptions inherent in the models for statistical analysis of the data must be violated. The researcher doesn't have a tenth of the control he would like. Subjectivity is rampant. At times, one feels he is attempting a task as impossible as analyzing the water at a given point in a moving stream.

A dweller in educational research's ivory tower can cite such reasons for refusing to dirty his hands in such messy projects and convincing others that nothing valid can come of work which necessarily produces tenuous, inconclusive findings. Granted, there is little one can say with certainty, but clues do become evident and trends do appear.

Is it not better to make the effort to extract what we can while projects are still fluid than to wait for more reliable findings about which, too often, nothing can be done? Suggestions for further research have become an accepted adjunct to research reports, but how often does anyone take up the challenges they present? Funds dry up, boredom sets in, a team disperses, or a new and more exciting project looms on the horizon. While a project is in operation, the time, incentive, energy and power to improve are available. Once it is finished, and its faults and shortcomings are ennumerated, it often dies and what was once a marvelous idea that caught the interest and imagination of a funding agency, staff and participants, is buried.

We, of the Intercultural Understanding Project, believe a concentration on process evaluation can, to a large degree, prevent this from happening. The belief that the evaluation of what goes on in the real world of the classroom cannot be truly assessed by standard experimental research design is not original with us. Last year in Educational Researcher, Guba went so far as to suggest that evaluation and research are two distinct and separate entities and that it is inappropriate to apply rigid research models to evaluation problems. James Finn makes a strong case against "institutionalization" of Title III evaluation in the December, 1969 issue of Educational Technology. He feels that attempts to over-standardize evaluations forces projects into ill-fitting molds which will stifle the very innovations Title III is meant to create.

Few, if any, projects or researchers have managed to solve the dilemma presented by the demand and necessity for meaningful evaluations of classroom programs. No matter how sophisticated our research design tools we cannot begin to measure all the myriad facets of a learning experience of which we are aware; and all of us are fairly certain that there are just as many variables of which we are not aware.

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What can be done? Right now, at least, we can't solve the problem, but we can perhaps lessen it by using a variety of approaches to evaluation as suggested by Stufflebeam (1969). One of the approaches is process evaluation, which he defines as "the way to identify and monitor, on a continuous basis, the potential sources of failure in a project". It is this aspect of evaluation that I address myself to today.

Before beginning, an introduction to the project itself should provide the common ground necessary to a joint consideration of both the inappropriateness of banking entirely on experimental techniques and the relative values of process evaluation in work of this kind.

The Intercultural Understanding Project is a Title III Curriculum program now in its second year of operation. Its primary function is to develop innovative materials for use in secondary world cultures classes. The emphasis is on the teaching of research skills, concept understanding, and critical thinking rather than on the accumulation of a body of factual information. Our rationale is that tomorrow's facts may be unknown today, but that the techniques for discovering and interpreting these facts can be taught. Hence, if we can teach students how to question, how to read critically, how to gather and assess sources of information and how to organize and analyze data, we will have provided them with the tools necessary for examining any culture.

Opportunities to engage in these kinds of activities are provided through the complete teaching packages which we assemble for each of the cultural areas with which we are concerned. Included in the package are teacher lesson plans, student readings and activities, supplementary readings for teachers, slide-tape series, transparencies, an area bibliography, a bibliography of the works of the outstanding writers and suggested student evaluation devices.

We also conduct frequent in-service sessions for participating teachers. Methodological philosophies and strategies are discussed at some, while others are devoted to new unit orientation. These meetings are meant to help teachers gain the necessary background to teach these new materials effectively.

During the first year the program was operational, 1,483 pupils in grades 9 through 12 were enrolled. They were taught by 12 teachers in 8 different suburban school districts in Allegheny County, Pennsylvania. Design problems appeared immediately. The majority of students were from middle or upper middle class homes and of average ability. About 60% of them were homogeneously grouped and 40%, heterogeneously grouped. The impossibility of assembling comparable control groups became more and more apparent as the year wore on and although control groups were used, only the large numbers involved saved the data from being completely invalid.

First of all, experimental teachers were in the program for a variety of reasons. Some were genuinely interested in the objectives of the program and volunteered, some were told by their administrators to join the project, others were interested more in furthering their own status than in the effect on their students and still others, merely bored with their present course. There was no way to find out all the factors that motivated every participating teacher. Secondly, the standards for ability grouping varied from school to school. Since all

schools do not use the same instruments for determining I.Q., even a search of permanent records wouldn't have established a uniform equation, nor did we have the time, money, or staff to administer one ourselves. Other areas which made control selection difficult were the assignment of socio-economic labels to communities with wide ranges of variables, the subtleties of administrative philosophy, and the diverse quality of educational facilities.

Half of the schools were able to provide their own control teacher, eliminating some of the contamination mentioned above. We had one teacher, however, who was her own control and she found it impossible not to share anything she thought particularly good in the experimental material with her control students. Another teacher re-classified his ability groups three-quarters of the way through the year.

The design problems we were faced with are not atypical. Many researchers who wish to work in the public schools are there without the blessing of the teachers or the administrators. They must structure their work so as not to interfere with the existing programs and policies if they expect cooperation and they must be flexible enough to adjust to the many deviations from the ideal experimental situation.

You cannot randomly assign pupils to treatments nor teachers to programs. Testing cannot always be accomplished at the optimum time or with standardized procedure. How do you cope with the fact that a substitute teacher administered the test and answered some unremembered student questions? Or what do you do if the administrator says your attitude test might offend the more conservative element of his community and tells his teachers to have their students skip items 6, 11, and 31? How do you compute pre-and post-test correlations if the teacher loses the list of student numbers he assigned at the pre-test session and assigns new ones for the post-test? I could go on to cite pages of examples, but I'm sure you get the idea of what can and does happen to the best laid plans of researchers in the public schools.

Without a monitoring system, which process evaluation is, the product evaluation contamination mentioned above may never come to light, and the "hard data" we have so much confidence in may really be pretty soft after all. The value of process evaluation increases in proportion to the decrease in usable hard data.

Everyone concerned with the Intercultural Understanding Project is involved in our process evaluation: teachers, administrators, students and staff. The most valuable members of this team are the participating teachers. Each week they send to the project office their comments on the week's work. They note revisions needed in the material, novel testing devices they have used, additional resources they found helpful, interesting discussion topics which arose, innovative presentation methods tried, problems they have had and areas where they need help. At periodic in-service meetings, staff and teachers review these sheets and the specific problems of each lesson are discussed. Student response to readings, visuals and activities are surveyed to decide what went well and what didn't. We don't look for unanimity, but we have found that if a few teachers express difficulty with something, the others have not found it one of the better parts of the lesson. Sometimes trouble spots can be cleared up simply through better directions on the use of the materials, while other times, an entire lesson must be rewritten or discarded. It is interesting that the initial unit we prepared on Japan was acclaimed by numerous experts as the best set of materials they have ever seen on Japanese culture, but it did not work in the classroom. It had to be completely rewritten, for after all, the final criterion is: Does it do the job for students?

There have been times when an evaluation sheet sent in by a teacher has pointed up some flaw in the materials that the staff deems so serious that a correction is sent out immediately. Since all teachers do not teach at the same rate, this allows the slower moving ones to avoid the flaw entirely.

Students, too, are asked to react to specific lessons. Usually each teacher collects five student critiques of each lesson, making sure that all his students participate eventually. These reaction sheets are filed and used in conjunction with the teachers' when revisions are made.

Students also participate in the actual writing of the materials. The first summer the project was in operation seven high school students were employed to help in the development of the introductory unit in which the American Teenage Subculture is explored. It was felt that students cannot be expected to understand other cultures without first investigating their own. This approach proved to be a highly motivating way to have students gain the necessary background for the year's work. We find students can make a worthwhile contribution to curriculum development and strongly recommend their use under properly supervised conditions. During the second summer, ten students were employed. They assisted in the revision process and reviewed new material.

The combination of student reaction sheets and student involvement in the actual development of materials has provided a basis for a part of our evaluation, which we found truly meaningful.

Administrators are another source of evaluation personnel. They are consulted about project technical problems and are asked to report on classroom observations made on their own. Having administrators as part of the evaluation team has resulted in their supportive interest in their teachers and an understanding, on their part, of the objectives and accomplishments of the project. This is a great asset when prospects for continuing the project beyond the federal funding period are explored.

The staff coordinates and analyzes all the evaluation feedback from teachers, students, administrators, as well as their own observations. They make the final decisions on revisions and new directions the project will pursue, using every source available to them.

Of course we supplement subjective forms of evaluation with objective ones. They work well together and compliment each other. For instance, the computerized analysis of the final skills test, patterned partially after the Watson-Glazer Test of Critical Thinking, indicated that the average ability student did significantly better with the materials than did either the high or low ability groups. The analysis gave us no clue as to why this was true. Through staff visitations to classrooms and teacher discussions at in-service meetings, it was discovered that high ability students had a difficult time adjusting to the absence of memorizable material that could be regurgitated on tests. On the other hand, it was brought out that low ability students, while still scoring at the bottom of the test scale, were contributing more to project classes where all logically supported opinions find equal acceptance.

Another aspect of this same analysis revealed that 10th and 11th grade did significantly better with the materials than did the twelfth grade. Weekly evaluation sheets had already alerted us to the fact that by 12th grade students have developed research strategies of their own and are relatively insensitive to the subtle differences presented in the new material. (Besides, the school which was using our materials in 12th grade had a requirement that 12 weeks of economics be squeezed into the World Cultures course somewhere).

We also did an item analysis of the skills test. Through it, we discovered that most of our students could not interpret graphic material fully or well. They also had difficulty in recognizing logical inferences, using the card catalogue, and appraising the legitimacy of information sources. Because of these findings, more of these kinds of activities have been built into the revised materials. For example, a lesson on the economy of Japan lent itself to an exercise in interpreting graphs and charts. Instruction in various graphic formats, descriptions of the types of data most appropriate to each, and the interpretations indicated, preceded the exercise. Although the material for the lesson was gathered by the researcher, the curriculum specialist incorporated it into the unit as a natural component.

Pre- and post- measures were administered to determine student's ability to distinguish fact from opinion and to detect changes in their attitudes towards other races, religions, and cultures. We were satisfied with the results of the Fact-Opinion Test. The attitude test data, however, revealed that while experimental students were more open-minded towards people of foreign cultures, the control students were more open-minded towards minority groups in our own country. This finding will influence revisions made in the introductory unit.

Necessarily, the main focus of our evaluations is the material we produce since these are our raison d'etre. In attempting to assess them thoroughly, we must make judgments about their effect and affect on students and teachers. By approaching this assessment from many different angles we try to compensate, at least in part, for the lack of control necessary to a more scientific investigation. By making the assessment a continuing process, revisions are made while it is still possible to learn from them. We concur with Cronback's (1963) statement: "Evaluation used to improve the course while it is still fluid contributes more to the improvement of education than evaluation used to appraise a product already placed on the market."

This glimpse into the evaluation activities carried on at our project hopefully has given you a concrete example of process evaluation that is usually discussed in the abstract by its proponents. There is no neat scientific research design; statistical assumptions are violated; little control is possible; subjectivity is rampant, but at least for the 2,400 students, 20 teachers and 12 school districts we are serving this year, we are having an impact on the direction of educational change.

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Finn, James. Institutionalization of evaluation. Educational Technology, 1969, 9(12), 14-23.

Guba, Egon. Significant differences. Educational Researcher, 1969, 20(3), 4-5.

Stufflebeam, Daniel L. Evaluation as enlightenment for decision making. Improving Educational Assessment and An Inventory of Measures of Affective Behavior, Washington, D.C., A.S.C.D., 1969.

PROJECT OBJECTIVES	SOURCES OF EVALUATION DATA	Teachers' observation reports	Staffs' observations (classroom, office, in-service meetings)	Administrators' observation reports	Students' reaction reports	Skills Test (Project Designed)	Attitude Test (Worldmindedness Scale)	Student Survey (Attendance at related programs)	Librarian Survey	Resource personnel reports (Project Supplied)	Samples of student work (Teacher Submitted)	
1. Students will exhibit an increased interest in intercultural (international) affairs as displayed by increased use of school library facilities, increased discussion and participation in classroom activities, and by attending non-credit, after-school programs related to areas of World Cultures interest.		X						X	X			
2. Students will develop an understanding of the various institutions found in cultures (kinship, religion, education, government, and economy), their role and their effect on contemporary world affairs. This understanding will be exhibited by naming the institutions, comparing or contrasting their functions with similar institutions in other cultures, by noting changes in institutional functions to contemporary decisions on foreign and domestic policy through discussion and/or written analysis.		X	X	X	X	X				X	X	
3. Student attitudes will be changed in a positive direction as they relate to members of other races, religions, or cultures as evidenced by performance on pre/post attitude tests, classroom interaction with foreign and Peace Corps personnel, and with class members of differing backgrounds.		X					X					
4. The students will develop skills in using the techniques of the social scientist, such as data collection, analysis and evaluation of data, formulation of hypotheses, projecting solutions, validating hypotheses based on available evidence, and supporting his conclusions in oral and/or written form.		X	X	X		X					X	
5. Students will examine a wide variety of viewpoints prior to forming opinions and give evidence of this by documentation of varying viewpoints; by analyzing and verbalizing his own point of view in terms of the experiences he brings to the learning situation; by examining two or more cartoons, articles, etc., pertaining to the same topic and identifying the author's frame of reference; and by conducting research into the background of authors to determine possible bases for their bias.		X	X	X							X	
6. Teachers of World Cultures courses will be retooled to enable them to use an interdisciplinary approach in developing understanding of intercultural concepts, as demonstrated by the teacher's ability to verbalize areas of concern for each of the social sciences in the analysis of a culture, by demonstrating competence in their ability to show interrelationships of the social sciences in units developed during their area in-depth study, and by drawing analogies to meaningful life situations of their students.		X	X	X	X							
7. Packages of materials will be developed and selected to meet individual needs of students at their various achievement levels by determining student needs indicated by past and present performance, by screening and evaluating commercially-prepared materials (printed and non-printed) as needed, by developing simulated materials at varying achievement levels, and providing tapes of important speakers or foreign resource persons for students in need of additional help, review, or those who may have been absent.		X	X	X	X							
8. Students will be provided with a shared real-life contact, in the classroom, with members of other cultures or with people who have been closely associated with other cultures by providing foreign resource personnel, Peace Corps volunteers, and State Department personnel.		X	X	X	X			X		X		

TEACHER'S WEEKLY EVALUATION SHEET

Name_____ Week From_____ to_____

INTERCULTURAL UNDERSTANDING PROJECT
Allegheny County Schools
100 Ross Street, Fourth Floor
Pittsburgh, Pennsylvania 15219

WEEKLY REPORT SHEET

Please consider the following topics and write a line or two in the areas applicable to your week's work.

1. Novel presentation methods used _____

2. Noteworthy topics and discussions _____

3. Non-project supplied materials you have found helpful _____

4. Student reactions to any or all of the above _____

5. Strengths and weaknesses of the program _____

6. Problems you have had _____

7. Recommendations for revisions _____

8. Areas where we can be of help _____

9. Unique testing or evaluation methods used _____

10. Enclose samples of work or testing materials you feel might interest others in the project.

mk

STUDENT LESSON SURVEY

Lesson #__

This survey form is designed to allow you to express your reactions to the various lessons on Africa. It is not necessary to sign your name. Please give each category your serious consideration. This is your chance to influence curriculum development. All questions may not be applicable to every lesson.

1. Do you believe the lesson helped you:

   a. Understand Africa and the problems of Africans better?

   _____Yes _____No _____Not Applicable

   b. See relationships between problems in Africa and those in other cultures, including your own.

   _____Yes _____No _____Not Applicable

   c. Distinguish similarities and differences between African culture and other cultures.

   _____Yes _____No _____Not Applicable

   Comments: _____

   _____

   _____

2. Do you believe the readings were:

   a. _____Interesting _____Boring _____Satisfactory

   b. _____Too Long _____Too Short _____About Right

   c. _____Too Difficult _____Too Easy _____About Right

3. If applicable, please comment on the reading(s). Did you like or dislike it (them)? State Why.

   _____

   _____

   _____

4. If applicable did you find the slides:

   a. _____Informative _____Not Helpful

   b. _____Interesting _____Dull _____All Right

5. Was there sufficient material available, either in the readings or in the library, to complete the activity?

   _____Yes _____No

6. Do you have any suggestions to improve the lesson--readings, presentation in class, etc. (List on other side).

INTERCULTURAL UNDERSTANDING PROJECT
Allegheny County Schools
100 Ross Street, Fourth Floor
Pittsburgh, Pennsylvania 15219

LIBRARIAN SURVEY

The purpose of this questionnaire is to note any differences in the use of library facilities and materials by the students in the Intercultural Understanding Project World Cultures classes, as compared to last year. Your cooperation in completing this form will be greatly appreciated.

_____ is/are the participating teacher(s) from your school.

1. In general, World Cultures students spent ___more ___less ___about the same time in the library as last year.

2. The number of books checked out by these students ___increased ___decreased ___was approximately the same.

3. The demand for periodical material ___increased ___decreased ___was about the same.

4. World Cultures students were scheduled into the library for entire class periods ___more frequently ___less frequently ___about the same number of times as last year.

5. The library was able to supply the needs of these students ___well ___adequately ___less than adequately.

6. Please note any areas where you feel you need additional materials.

_____

_____

_____

7. Have you purchased any materials this year because of the new World Cultures program? ___Yes ___No

   If yes, note what you have bought and why.

_____

_____

_____

_____

Please return this form to: Mrs. Marion Karl, Intercultural Understanding Project, 100 Ross Street, Fourth Floor, Pittsburgh, Pennsylvania 15219.

Form Used to Record Staff Visitations to Project Classes

School_____ Teacher_____ Date_____

Visitation by:_____
Unit:_____ Lesson:_____

Class observed: ☐ yes ☐ no
Free period discussion: ☐ yes ☐ no

COMMENTS:

PROBLEMS:

RECOMMENDATIONS:

FOLLOW UP: